

## REMARKS

Upon entry of the present reply, claims 1-15 will remain pending.

Reconsideration of the rejections of record and allowance of the application in view of the following remarks are respectfully requested.

### Response To Art Based Rejections

The following art based rejections are set forth in the Office Action.

(a) Claims 1, 2, 6 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 2004/0003768 A1 to Goyal.

(b) Claims 5, 11 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 2004/0003768 A1 to Goyal in view of U.S. Patent No. 6,024,080 to Hodsden.

(c) Claims 3, 4, 7, 8, 13 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 2004/0003768 A1 to Goyal in view of U.S. Patent No. 4,280,857 to Dameron, Jr. et al. (hereinafter "Dameron") and U.S. Patent No. 6,449,997 to Bertolini.

(d) Claims 9 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 2004/0003768 A1 to Goyal in view of U.S. Patent No. 6,024,080 to Hodsden, U.S. Patent No. 4,280,857 to Dameron and U.S. Patent No. 6,449,997 to Bertolini.

Regarding the disclosures used in the rejections of record, it does not appear that any document teaches or suggests, as recited in Applicants' independent claim 1, a method for producing metallic flat wires or strips with a cube texture, comprising processing a material based on nickel, copper, gold, or silver into a wire having an essentially circular cross section by a cold drawing method with high-grade forming over multiple drawing stages, achieving a total cross-sectional reduction  $\varepsilon_g \geq 75\%$  or a logarithmic deformation  $\phi_g \geq 1.4$ , and then further

processing the wire by further forming and annealing methods into a flat wire or a strip with a cube texture and having a width that can be adjusted in a defined manner, the defined width being determined and adjusted by the wire cross section of the wire having an essentially circular cross section and degrees of forming of further forming steps for the wire.

The rejections contend that Goyal discloses each and every feature recited in Applicant's claims 1, 2, 6 and 12. However, it does not appear that Goyal is starting with an essentially circular cross-section, and then changing this essentially circular cross-section to that of the tape disclosed in Goyal. For example, the Examples of Goyal appear to reduce the thickness of a slab to a tape. The Examiner points to paragraph [0013] of Goya for a circular cross-section; however, the rejection does not point to any specific disclosure in this paragraph that pertains to a circular cross-section. Moreover, this portion of Goyal relates to rolling textures possibilities in FCC metals in the first sub-space of Euler Space, and not to cross-sectional shapes of the substrates. As noted above, the Examples of Goyal all appear to be directed to the reduction of a slab to a tape,

Goyal discloses sharply biaxially textured metallic substrates, such as a single crystal, and a method for the production thereof which is based on the method of secondary recrystallization with respect to the thermal treatment. This approach should be seen in the context of single crystal growth in the solid state, in which the stipulated nuclei are stimulated to the preferred growth at temperatures above the primary recrystallization and wherein temperature gradients are also used for growth control. According to the prior art, the primary recrystallization was used to obtain a cube texture until the method according to Goyal.

The clear difference of Goyal to the previous approach according to the prior art via the primary recrystallization lies in the secondary recrystallization in addition to the higher

temperatures to be used with the thermal treatment above all in the specification of a crystallization nucleus which is thermally stimulated to growth, so that ultimately a single crystal substrate is produced. Claim 1 of Goyal is also formulated accordingly by reciting a method for forming single grained substrates, comprising the steps of providing a deformed metal substrate having a Cu-type texture; and annealing said deformed metal substrate to a temperature higher than a secondary recrystallization temperature of said metal substrate, but below said predetermined temperature, to form a single crystal substrate.

The method disclosed and claimed by Goyal is differentiated from the approaches for RABiTS production, which are carried out via the primary recrystallization, which is emphasized by Goyal. See, for example, paragraphs [0005] and [0006] of Goyal.

In contrast, according to the present invention, a wire produced by high-grade cold forming is processed by forming and annealing methods to form a flat wire or strip with cube texture with defined width. Such a method is clearly a primary recrystallization.

It is thus clear that the present invention has no relation to Goyal because a different recrystallization principle is involved and the present invention claims specific forming conditions and shapes of the material, which are capable of producing a cube texture.

For clarification, the contents of Goyal and the present invention are compared below:

Goyal	Present invention
- providing a deformed metal substrate having a Cu-type texture	- material based on nickel, copper, gold, or silver, from which a wire is produced by high-grade forming with a total cross-sectional reduction $\epsilon_g \geq 75\%$ and a logarithmic deformation $\phi_g \geq 1.4$
	- further processing forming methods and

- annealing said deformed metal substrate to a temperature higher than a secondary recrystallization temperature of said metal substrate, but below said predetermined temperature, to form a single crystal substrate	- annealing methods into a flat wire or a strip with a cube texture and having a width that can be adjusted in a defined manner
	the defined width being adjusted by the wire cross-section and the degrees of forming of the further forming steps for the wire
- production of a metal single crystal substrate	- production of a metallic flat wire or a strip with a cube texture

Moreover, in contrast to the assertions in the rejections, Applicants submit that Goyal is directed to the production of a single crystal substrate and not, as asserted in the rejection, a metallic flat wire or strip with a cube texture.

Although Goyal discloses in principle that a wire can also be the substrate, no statements are made on the wire cross-section.

Additionally, it is not discernible from paragraphs [0024] and [0033] of Goyal that *several* forming steps are to be carried out. The paragraphs begin with “The ... step ...”, and it therefore appears that only one step disclosed.

Still further, the rejections, without any support, assert that the “marked deformation” according to paragraphs [0066] and [0067] of Goyal would mean a total cross-sectional change of  $\geq 90\%$ . Applicants submit that this cannot be discerned from these two paragraphs. In fact, it is stated that the degree of deformation is to be at least 60%. A *total* degree of deformation is not

mentioned either, since according to Goyal no further deformation steps are to be carried out after the production of the substrate.

Still further, in paragraphs [0018] through [0021], contrary to the assertion in the rejections, no further deformation steps or temperature steps are given, but only the actual thermal treatment above the secondary recrystallization temperature and the application of epitaxial layers onto the substrate.

Accordingly, Goyal does not teach or suggest each of the features recited in Applicants' claims whereby the rejections should be withdrawn.

None of Hodsden, Bertolini and Dameron overcomes the deficiencies of Goyal.

Hodsden is used in the rejections only for its disclosure of a cold drawing method carried out in respectively alternating drawing directions (reversibly). Accordingly, whether or not one having ordinary skill in the art would have combined the disclosures of Goyal and Hodsden, Applicants' recited subject matter would not be at hand.

Bertolini describes a special process for wire drawing. This lies in carrying out the subsequent drawing stage with a wire-drawing die that has an opening angle of  $>30^\circ$ . The lubricant film is thereby removed which was previously applied as a layer. The rejection must establish why one having ordinary skill in the art would have combined the disclosures in the manner asserted in the rejection. In any event, whether or not one having ordinary skill in the art would have made the combination asserted in the rejections, Bertolini does not overcome the deficiencies of Goyal whereby Applicants' recited subject matter would not be at hand.

Dameron describes a special cold-drawing method in which the wire is continuously annealed in a furnace before the last shaping step. Again, the rejection must establish why one having ordinary skill in the art would have combined the disclosures in the manner asserted in

the rejection. In any event, whether or not one having ordinary skill in the art would have made the combination asserted in the rejections, Dameron does not overcome the deficiencies of Goyal whereby Applicants' recited subject matter would not be at hand.

Applicants again note that none of the documents teaches or suggests a method for producing metallic flat wires or strips with a cube texture, comprising processing a material based on nickel, copper, gold, or silver into a wire having an essentially circular cross section by a cold drawing method with high-grade forming over multiple drawing stages, achieving a total cross-sectional reduction  $\varepsilon_g \geq 75\%$  or a logarithmic deformation  $\phi_g \geq 1.4$ , and then further processing the wire by further forming and annealing methods into a flat wire or a strip with a cube texture and having a width that can be adjusted in a defined manner, the defined width being determined and adjusted by the wire cross section of the wire having an essentially circular cross section and degrees of forming of further forming steps for the wire.

Applicants' claimed subject matter permits the production of flat wires or strips with cube texture starting from thick wires, which has hitherto been carried out only on the basis of rolled wide/flat products. The shaping texture formed during drawing surprisingly is no impediment to the development of the cube texture in the final annealing process. The necessity that has hitherto been presumed according to the prior art of a shaping texture that can be produced only by cold rolling, is circumvented with the recited method. The method makes it possible to use largely or even exclusively drawing machines for the production of substrates with cube texture.

Accordingly, the rejections of record should be withdrawn, and each of the pending claims should be indicated to be allowable.

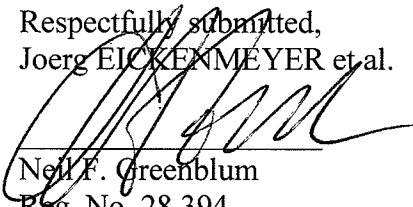
### CONCLUSION

In view of the foregoing, the Examiner is respectfully requested to reconsider and withdraw the rejections of record, and allow each of the pending claims.

Applicant therefore respectfully requests that an early indication of allowance of the application be indicated by the mailing of the Notices of Allowance and Allowability.

Should the Examiner have any questions regarding this application, the Examiner is invited to contact the undersigned at the below-listed telephone number.

Respectfully submitted,  
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